

NOTES ON ORIENTAL *THECLINAE* (LEP. *LYCAENIDAE*) WITH DESCRIPTIONS OF NEW SPECIES.

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THE Theclids with metallic green males grouped by Seitz (*Macrolep.* i, p. 269) under *Zephyrus* have proved a source of considerable difficulty and, as Seitz himself remarks, will require very careful study before they can be satisfactorily determined. The juxtaposition, in the British Museum, however, of the types of species described by Leech, Butler, Murray, Oberthur and others has permitted certain conclusions to be reached, purely upon the basis of a comparison of external features, that may be of value to students of this very attractive group of species.

In the following notes the species are dealt with, for convenience only, according to the arrangement in Seitz. To these notes have been added descriptions of several other far eastern Theclids of related genera which appear to have been hitherto unrecognized. As Hemming has shown (1934, *Generic Names Holarctic Butterflies*, p. 115), *Zephyrus* Dalman (1816) sinks to *Thecla* Fabricius (1807), both having the same genotype.

1. *Thecla orientalis* Murray.<sup>1</sup>

*Thecla diamantina* Ob. and *T. cognata* Staud., here placed as synonyms of *orientalis*, have nothing to do with this species (see below).

"ab. *suffusa*" Leech appears to be a good species. Except for the narrow forewing and very wide hindwing black borders, the male upperside is entirely (not only in outer third) green, of the same tint as in *orientalis*, but very much duskier, almost smoky. The underside of the female is dark brown as in the male; on the upperside it is the same as the female *orientalis*. It is well figured by Leech (*Butt. China*, pl. 27, fig. 14). With it flies a race of *T. orientalis* which may be characterized as follows:

1a. *Thecla orientalis leechi* subsp. nov.

♂♀. Indistinguishable on the upperside from typical *orientalis*. Recognizable at once by the underside, the ground colour of which, by comparison, is almost white, i.e. very pale silvery grey, thus rendering the white markings, which are in fact somewhat reduced, very inconspicuous.

Holotype ♂ "Ta-chien-lu, 7500 ft., A. E. Pratt collection, July 1889" (ex coll. Leech); allotype ♀ "de Ta-tsen-lou à Moupin, chasseurs indigènes, etc., 1892" (ex coll. Oberthur); both in British Museum.

This subspecies appears to occur throughout Szechuan, as indicated by Leech (*loc. cit.*) and also in Yunnan, whence Oberthur had it from Tsekou. In Central China (Chang-Yang) it is more strongly marked on the underside. As in many species of this group a form of the female occurs in which the cell and area 1a

<sup>1</sup> For references to names see Seitz, *Macrolep.* i, pp. 323-328.

on the upperside of the forewing are blue. This may be known as ♀ f. **coelestina** nov., the type being a female collected by Kriecheldorf at Moupin in June 1890.

## 2. *Thecla taxila* Bremer and Grey.

The names "ab. *aurorina* Ob." and "*ultramarina* Fixsen" should be excluded from consideration, as they do not in fact apply to any form of this species (see below).

This species falls naturally into four subspecies, viz. :

(a) *T. taxila taxila*. A small form from Manchuria, Hokkaido and the higher elevations of Honshu.

(b) *T. taxila sachalinensis* Matsumura.

(c) ***T. taxila koreana*** subsp. nov. A larger form, deeper green above and with wider black borders; intermediate below between *T. t. taxila* and *T. t. japonica*. Korea: Séoul (♂ holotype) and Gensan (♀ allotype).

(d) *T. taxila japonica* Murray, occurring apparently throughout Japan except where *T. t. taxila* occurs, and in Formosa.

The original description of *taxila* having been based on a female with unicolorous upperside, Kardakoff's name *unicolor* for this form is superfluous; similarly ♀ f. *bellus* Kard. is the same as the older ♀ f. *regina* Butler; and ♀ f. *quercus* Kard. corresponds with the ♀ f. *fasciata* Jans. of subspecies *japonica*. The assertion (Seitz i, p. 270) that *fasciata* has a coppery stripe along the inner margin of the forewing upperside is groundless; the type specimen bears no such feature, nor does the original description make any reference to it.

## 3. *Thecla aurorina* Ob.

Oberthur's type female of *aurorina* proves to be a female of the species dealt with by Seitz (i, 270), a *T. brillantina* Staudinger. The Central Chinese subspecies has been described by Seitz (*loc. cit.*) as *T. coruscans jankowskii*; the Japanese as *Thecla aino* Matsumura.

## 4. *Thecla smaragdina* Bremer.

Oberthur's type male of *diamantina* proves to be a male of this species. A Japanese female is well figured by Matsumura (*Ill. Common Insects of Japan*, i, pl. xiii, fig. 15) as *brillantina* Staud. It is doubtful whether Japanese specimens are subspecifically separable from those from the mainland; I can find no constant character.

## 5. *Thecla coruscans* Leech.

The name is consistently spelt *coruscans* wrongly by Seitz. The species is very constant, but in Yunnan a slightly different race occurs which may be described as :

### 5a. ***T. coruscans dubernardi*** subsp. nov.

♂. Transitional between *T. coruscans coruscans* and *T. souleana* (see below). The upperside resembles the latter, but the underside retains the warm brown tones of *coruscans*. The markings on the underside retain the relative positions of those of *coruscans*, but the white lines are about half as wide and less regular, and the orange anal markings are reduced by about one-third in extent. No discocellular bars.

Holotype ♂, Tse-kou, ex coll. Oberthur.

6. *Thecla souleana* sp. nov.

♂. Closely resembling *coruscans* on the *upperside*, but of a duskier colour suggesting that of *T. zoa* from Darjeeling; black borders rather broader, apex of forewing broadly black and costal area mostly black; green of the hindwing nowhere passing above vein 6; cilia prominently white. On *underside* ground colour uniform rather cold grey-brown; discal white lines prominent but much narrower and dark edged on inner side; discocellular lines well developed, dark, narrow, faintly white edged (this feature is absent from *coruscans*). *Forewing* with much darker wedge-shaped, curved, submarginal band tapering apicad, very faintly pale-edged; *hindwing* with faint exceedingly short white line towards base, near costa, orange anal markings about half the size of those in *coruscans*, and the very faint wavy postdiscal line correspondingly approximated to the margin, a powdery submarginal band of grey-blue scales; postdiscal and submarginal bands both parallel to margin, not anteriorly divergent as in *coruscans*; front end of discal line 9 mm. from base of wing. Length of forewing 15 mm. (18 mm. in *coruscans*).

Holotype ♂ and 4 paratypes all in British Museum from Yarégong in Talu district of Szechuan, West China.

7. *Thecla desgodinsi* Ob.

The Oberthur collection contained two males and one female in addition to the type. These are from Tien-tsuen, Siao-lou and "Yunnan." They prove to represent a subspecies of the Indian *T. duma* Hew.

8. *Thecla ultramarina* Fixsen.

*Thecla ultramarina* Fixsen (= *cognata* Stgr.) is a species quite distinct from *taxila* Brem. and *orientalis* Murray with both of which it flies in company, both in Japan and on the neighbouring mainland of East Siberia. The male has the same upperside coloration as *orientalis*, but has the marginal band of the hindwing upperside much broader between the apex of the wing and the shorter of the two tails, and area 6 of the hindwing (which is blue-green in *orientalis*) almost completely filled by the expansion of the costal black border. The female upperside is like that of *orientalis*. The underside of both sexes is definitely brownish, not plain grey, and the female often has orange markings about the tornal area of the forewing. Japanese examples, which represent a doubtful subspecies, have been named *jezoensis* by Matsumura; small females of this with very brown undersides and rather curved discal lines are referable to ♀ f. *jozanus* Mats.

9. *Thecla lutea adusta* subsp. nov.

Smaller than the typical Japanese race and slightly darker beneath, particularly characterized by the proximity of the discal silvery lines to the cell. In many specimens the inner of those two lines almost touches that at the cell-end. All the silvery lines also are rather more prominent. On the upperside the black apical border is rather wider.

19 ♂, 13 ♀ in British Museum from Siao-lou (♂ holotype), eastern frontiers of Tibet (♀ allotype), and Tien-tsuen, all ex. coll. Oberthur.

A variety, of which two females are included in the above series, in which the silver is replaced by pale greyish ochreous may be known as ab. *tatsienluica* nov.

10. *Thecla icana setschuanica* subsp. nov.

*Zephyrus icana* Moore, Leech, *Butt. China* ii, 380, pl. 27, fig. 4.

The race from Szechuan, West China, differs from typical *icana* in being blue rather than green-blue on the upperside in the male and much more extensively blue in the basal half of the forewing in the female. The underside shows no constant difference, though on the average the tranverse bands are narrower, and the marginal markings much better defined, the marginal lines on the hindwing grey-brown and never orange-tinted above vein 3.

Holotype ♂ and allotype ♀, Ta-tsien-lu, 10,000 ft., A. E. Pratt coll., July 1889, ex Leech coll. A long series of both sexes in British Museum from Ta-tsien-lu, Omei-shan, Siao-lou and Tibetan borders of Szechuan.

11. *Thecla ouvrardi* sp. nov.

♂. *Upperside*, dark brown, cilia white; forewing with small triangular yellow spot on discocellulars, the apex directed towards termen, and an ill-defined roundish dark-yellow patch beyond, in area 3; hindwing with fine blue marginal line in 1c and 2, and the tips of the cilia there black. *Underside* silvery white, anteciliar line black, cilia white, a black bar at the discocellulars. *Forewing* with a strong black postdiscal line (about 1 mm. wide, and continued on hindwing), a faint dusky postdiscal band from costa to vein 4, where it is dislocated and continued as isolated dark spots (2) in 2 and 1c, a shadowy terminal dusky line. *Hindwing* discal line commences at middle of costa (about 1 mm. wide) and runs, outwardly convex, to cell bar, thence, considerably narrowed, past the end of cell to reach postdiscal line on vein 2, the subsequent W-mark delicate but distinct; black marginal ocellus in 2 placed in a square yellow spot surrounded by a fine silver line, the yellow continued broadly (though divided by silver along vein 2, and enclosing a wedge of silver in 1c) to anal angle, which is black, and thence narrowly to end of vein 1a; tip of cilia in 1c and 2 black. *Length of forewing*, 20 mm.

Described from the unique holotype from the Oberthur collection labelled "Rahand, Yunnan. Reçu du père Ouvrard, missionnaire apostol. à Oui-si ou Wei-si, Yunnan, Chine, en janvier 1917."

The species is very closely related to *T. arisanus* Wileman, from which it differs most obviously in the much better development of the markings of the underside. The upperside is exactly like that of the female of *arisanus*, the male of which is devoid of markings on the upperside and was treated by Wileman as a form of the female having "a dull unicolorous brown" upperside (1909, *Ann. Zool. Jap.*, 7: 92). The ♂ genitalia of *T. arisanus* and *T. ouvrardi*, examined without dissection, show close similarity, but whereas the median lobe of the uncus in the former is parallel-sided and somewhat truncate, in *ouvrardi* it is bluntly Y-shaped. *T. ouvrardi* will probably prove to be a mainland representative of *arisanus*. *T. picquenardi* Oberthur also is closely related but has an additional (submarginal) band on both wings below.

12. *Thecla yangi* sp. nov.

♂♀. *Upperside* very pale silvery bluish, the *forewing* costal and apical areas broadly dark brown shading in the pale area and extending to tornus rather broadly in ♀, less so in ♂, cilia white; *hindwing* apex dusky, the veins

finely black, a fine black anteciliar line preceded by a narrow white line; cilia white; tail black, tipped with white; submarginal black spots in 1c and 2. *Underside* greenish ochreous, both wings crossed by a rather broad (1 mm.) silvery line and bearing a series of postdiscal inwardly silver-edged black spots, a white terminal line, a black anteciliary line and white cilia; on the *forewing* the transverse line runs from the costa at about three-fourths towards tornus, but is broken on vein 2 to end on dorsum at three-fourths, and the postdiscal series consists of one spot each in areas 2-4 (decreasing rapidly in size) and a pair in 1b; on hindwing the silver line runs from costa at two-thirds to vein 2, where it touches the silver edging of the postdiscal spot in 2, thence in a curve to vein 1 and to inner margin at midway; a complete series of 8 postdiscal spots, of which those in areas 1c, 2 and 3 are the largest; anal lobe black, and a conical marginal spot (outwardly edged or obscured by silver) in 1c and 2; a broad, diffuse orange band occupying most of the area between postdiscal series and margin, but narrowing towards apex. *Length of forewing*, ♂ 16 mm.; ♀ 20 mm.

Described from 1 ♂ labelled "China, Foochow, 1937-38, M.S. Yang" in the British Museum (holotype); and 1 ♀ labelled "China, Kwantung, Lung tao shan, 15. iv. 18, R. Mell" in the collection of Dr. Mell (allotype ♀).

### 13. *Satsuma albilinea* sp. nov.

Closely allied to *S. circe* Leech, of which, indeed, it is conceivable that it is but a seasonal form. Both sexes resemble that species on the upperside, except that the fringes are entirely unspotted, and the outline of the wings much smoother. The hindwing in the female has the whole of the basal half blue. On the underside the pattern is as in *circe*, but the forewing and the distal third of the hindwing are rather light ochreous, the dark discal patch on the forewing and the dark discobasal area on the hindwing being edged by a continuous narrow white line. It appears to be quite as common as *circe*, and flies in the same region, namely Ta-tsien-lu, W. China, from which place the types and a series of both sexes are in the British Museum; also 1 ♂ from Yarégong, all ex coll. Oberthur.

### 14. *Strymon abdominalis persica* subsp. nov.

♀. *Upperside*.—A prominent white marginal line on hindwing from anal lobe at least to vein 3, continued inconspicuously to apex. *Underside*.—Postdiscal transverse white lines prominent, very irregular, internally strongly black-edged; orange lunules narrow and pale yellow; hindwing marginal series of markings well developed and extending fully to apex of wing, the innermost series consisting of prominent and comparatively large white cones. The spot in the centre of the ocellar spot in 2 is much larger and more rounded than in other races of *abdominalis*, and the same also applies to the black lobe spot.

This subspecies is very well illustrated by the figure of a female (fig. 3) on the plate accompanying Colonel Peile's account of the Butterflies of Mesopotamia and N.W. Persia (*J. Bombay N.H. Soc.*, 28, pp. 135-155; 353-370; 1921-2). The specimen there figured is wrongly referred to subsp. *gerhardi* Stgr., and it is obviously distinct from the male of that subspecies illustrated on the same plate immediately below it (fig. 4). The ♀ holotype and two ♀ paratypes were all taken by Lt.-Col. H. D. Peile in the Karind Gorge, N.W. Persia, at an altitude of 6,000 ft. in July 1918—the holotype on the 14th, the others on the 13th and 17th respectively.

15. *Strymon persimilis* sp. nov.

The *upperside* of the unique ♂ specimen of this species resembles almost exactly the *fixseni* form of the female of *S. eximia* (Seitz, *Macrolep*, i, pl. 72i), but the orange patches are a little less strongly developed—the forewing patch, for example, extends from vein 2 not quite to vein 6 and does not enter the cell at all. The androconial patch is relatively very large, being over 2 mm. long on a forewing 16 mm. long. On the hindwing the red patch extends *evenly* from the lobe to vein 3. The underside is best compared with that of *percomis* Leech (*l.c.* pl. 73a), which it strongly resembles both in colour and pattern. On the forewing, however, the silvery line of narrow lunules is completely missing; and on the hindwing this line is composed of much fainter and flatter lunules, so that the inner edges of the red lunules near the anal angle are almost straight. Yunnan, R. P. Delavay (ex coll. Oberthur); type in the British Museum.

16. *Strymon dejeani* sp. nov.

In size this species is no larger than *prunoides* Stgr. The *upperside* is uniformly very dark brown; the cilia are white. Both wings are very rounded, the hindwing having a single narrow tail at vein 2, only the faintest projection at vein 3, and a very slight lobe. The male patch on the forewing is small, narrow and very short. The underside is ochreous with a greyish tinge, and a prominent, interrupted, black-edged white line crosses both wings near their margins and parallel to them (in the same position as the corresponding line in *Strymon acaciae*), not being very sharply angled anywhere. The hindwing has a prominent pure white marginal line that just extends on to the forewing; the lunules are dull yellow and only extend clearly halfway round the margin; the black anal spot is very small, the other black spot narrow but moderately tall, the intervening grey spot broader and shorter than it.

Holotype ♂ Siao-lou, chasseurs indigènes du Père Dejean, 1903; allotype ♀, same data, 1902; 3 ♂ paratypes also Siao-lou, 1 Moupin; all ex coll. Oberthur, in British Museum.

17. *Strymon ledereri hyrcanica* subsp. nov.

The large typical form of *ledereri* which flies in Asia Minor, the Caucasus, etc., is replaced in North-East Persia by a much smaller subspecies with a forewing measurement of about 13 mm. only (16–17 mm. in typical *ledereri*). In this subspecies the underside is usually rather lighter and greyer than in typical *ledereri*, the black spots are usually a trifle smaller and much less broadly ringed with white, and the orange marginal spots frequently though not always relatively larger.

Holotype ♂ and allotype ♀ “N. Persia, ex Staudinger” in British Museum. Other specimens in the British Museum are from “Hyrcania” (ex Staudinger); Iskander-Kul, Hissar Mountains, 22–25.vi.92; Shahkuh; Ordubad, 8.v.83; and Armenia.

One male from Shahkuh is aberrant in that the forewing is devoid of markings on the underside, except for the submarginal black spots in 2 and 3.

18. *Sinthusa rayata* sp. nov.

♂. Nearest *S. chandrana* on the *upperside*, but with a patch of brilliant blue at the base of the forewing, of small extent, and the similar blue on the

hindwing divided up by long black rays along the veins, extending right to the margin. The abdominal fold is grey. The *underside* is very light bluish-grey with bright ochreous markings, namely a narrow double stripe at the end of the cell and an irregular scarcely connected series of narrow discal spots on each wing. The *hindwing* in addition has two spots in the cell, a third above them near the costa, and a fourth against the inner margin; the black subanal ocellus is quite small and is surmounted narrowly by an iridescent blue line and then a yellow one, both of which extend to the black lobe, the yellow one even farther. The female is unknown.

Habitat: Tien-Tsuen, W. China. Holotype ♂ in British Museum.

19. **Rapala caerulea** and 20. **R. micans** (Bremer & Grey) 1853.

*Thecla micans* Bremer and Grey (p. 8) and *Thecla caerulea* iidem (p. 9), Schmett., *N. China* 1853; Ménétriés, *Cat. Mus. Petr. Lep.*, i, pl. 4, figs. 3 and 4, 1855.

The very clear descriptions given by Bremer and Grey are accompanied by references to a plate which, however, did not appear with the publication. Subsequently, on plate 4 of Ménétriés' *Cat. Mus. Petr. Lep.*, i, there appeared figures of these two species unaccompanied by text. Fig. 3 purports to represent *Thecla micans* and fig. 4 *Thecla caerulea*. It is quite obvious, however, that the names are transposed on the plate, if the figures be compared with the descriptions where, moreover, "fig. 3" is stated to represent *T. caerulea* and "fig. 4" *T. micans*. The current usage of these names is clearly based upon the Ménétriés plate alone and is wrong. *Thecla micans* Bremer and Grey is synonymous with *Thecla nissa* Koll. (1848), or perhaps represents a local race of that species; and *Thecla caerulea* Bremer and Grey is the oldest name for the species hitherto known as *Thecla micans*. Both species are properly to be referred to *Rapala* Moore (1881).

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